

INTERDEPARTMENT CORRESPONDENCE

FILE STP00-0043-01(057), Richmond County
P.I. No.: 220680-
SR 4/15th Street/Augusta from Milledgeville Road
to Government Street
OFFICE Atlanta, Georgia
DATE January 16, 2008

FROM 
James B. Buchan, P.E., State Urban Design Engineer

TO Brian K. Summers, P.E., State Project Review Engineer

SUBJECT **ANALYSIS OF APPROVED VALUE ENGINEERING STUDY ALTERNATIVES**

A Value Engineering Study was conducted on the above noted project in February 2007. Based on the information available at the time, 15 alternatives were proposed which, if implemented, would significantly reduce the overall cost of the project. Implementation of Alternative Nos. 1, 8, 9/10, 15, 17, 19, 21, and 24 was approved on June 11, 2007.

Alternative No. 9/10 recommended a redesign of the intersection of MLK, Jr. Boulevard with 15th Street to provide a continuous movement along the State Highway System. While the alternative would improve traffic operations along SR 4, it would increase the cost of the project and require an extension of the Oates Creek double-double 10' x 10' RCBC. The design of the intersection evaluated during the study did not require an extension of the culvert. Implementation of the alternative would require preparation of a Hydrologic Study and Hydrology Report and FEMA coordination. Alternative 15 recommended constructing a 16-foot raised along MLK, Jr. Boulevard and 15th Street in lieu of an 18-foot and 20-foot raised median, respectively.

Capacity analyses of Alternative 9/10 have been performed. It was determined that reconstructing the intersection to provide a continuous movement along SR 4 would result in excessive delay to traffic on 15th Avenue. The vehicle queue generated from the delay would be approximately 1,000 feet long. Several surface streets intersect 15th Avenue within the limits of the calculated traffic queue. Due to lack of knowledge regarding surface street traffic patterns, a meeting was held on September 7, 2007, between Urban Design, District Preconstruction, and Area Office personnel and Augusta-Richmond County Engineering Department personnel to discuss the capacity analysis results of Alternative 9/10. It was discovered during the meeting that 15th Avenue is one of two connecting streets between SR 4 and Savannah Road. At the city's request, Urban Design agreed to investigate design alternatives regarding connectivity of 15th Avenue with SR 4. Attached is a drawing illustrating each design alternative, as well as the Citizen's Advisory Committee (CAC)-developed alternative and the recommended Value Engineering Alternative 9/10.

An analysis of the Level of Service and Benefit-Cost ratio (using pavement costs only) for each alternative was conducted to determine a 'preferred' alternative. The analysis yielded a Level of Service along SR 4 for each alternative comparable to the CAC-developed

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alternative. The Benefit-Cost ratio analysis yielded the MLK, Jr. Boulevard realignment alternative as more cost effective when compared to the CAC-developed alternative (5.30 to 4.82). However, the MLK, Jr. Boulevard realignment alternative would result in greater residential impacts than the CAC-developed alternative. The construction costs associated with extending the Oates Creek RCBC and realignment of MLK, Jr. Boulevard were not included in the cost estimate to implement the alternative. The Office of Urban Design has determined the construction costs to complete the additional work to be \$649,598. When added to the estimate to implement the alternative, the total cost of Value Engineering Alternative 9/10 totals \$828,711. Given Alternative 9/10 yields a comparable Level of Service along SR 4 at a significant cost increase, Urban Design recommends the CAC-developed alternative be approved for use in design of SR 4.

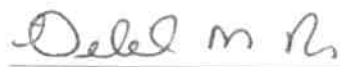
The estimated cost savings associated with Value Engineering Alternative 15 (constructing a 16-foot raised median along MLK, Jr. Boulevard and 15th Street in lieu of an 18-foot and 20-foot raised concrete median, respectively, was calculated to be \$480,146. The estimate was determined by calculating the costs associated with not constructing two feet of full-depth pavement and four feet of raised concrete median. It did not reflect the costs associated with not constructing four feet of raised concrete median along 15th Street. The design evaluated during the study proposed the section of SR 4 along MLK, Jr. Boulevard be milled and overlaid. In addition, the design of an 18-foot raised concrete median with four, 11-foot travel lanes would fit within the existing curb and gutter. Correcting the calculations, the estimated cost savings would be \$374,404. Since the portion of SR 4 along MLK, Jr. Boulevard is proposed to be milled and overlaid, and the fact that the proposed typical section of four, 11-foot travel lanes with an 18-foot raised median can be constructed within existing curb and gutter, Urban Design recommends revision (and approval) of Value Engineering Alternative 15 to include construction of four, 11-foot travel lanes and a 16-foot raised concrete median on SR 4 along 15th Street only.

CONCUR:


Brian K. Summers, P.E., State Project Review Engineer

1/28/08
Date

APPROVAL:


Gerald M. Ross, P.E., Chief Engineer

1/28/08
Date

JBB:CAH
Attachment

Cc: Todd Long, Nabil Rad, Lisa Meyers, Laura Rish, Richard Marshall, Rusty Merritt,
Gus Shanine, FHWA

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE: STP-043-1(57) Richmond
P.I. No. 220680
S.R. 4/15th Street Widening/Reconstruction

OFFICE: Engineering Services

DATE: June 8, 2007

FROM: Brian K. Summers, PE, Project Review Engineer

TO: Ben Buchan, P.E., State Urban Design Engineer

SUBJECT: IMPLEMENTATION OF VALUE ENGINEERING STUDY ALTERNATIVES

Recommendations for implementation of Value Engineering Study Alternatives are indicated in the table below. Incorporate the VE alternatives recommended for implementation to the extent reasonable in the design of the project.

ALT #	Description	Potential Savings/LCC	Implement	Comments
1	Use an 8-foot wide multiuse lane on the west side and a 5-foot wide sidewalk on the east side of the project from Olive Rd. to Government Street	\$470,818	Yes	This should be done.
4	Use 5-foot wide sidewalks throughout the project	\$488,424	No	Since Alternate No. 1 is to be implemented, this VE Alternate is no longer applicable.
5	Do not construct improvements along Government Street	\$552,769	No	This work is needed to correct an existing operationally deficient intersection.
6	Selectively Barricade Side Roads	-\$145,147 (cost increase)	No	This would require that Cul-de-sacs be built which would require additional Right of Way.
8	Reduce the 12-foot wide travel lanes to 11-foot throughout	\$291,321	Yes	This should be done.

ALT #	Description	Potential Savings/LCC	Implement	Comments
9/10	Improve the horizontal alignment to allow continuous movement along S.R. 4/15 th Street	-179,113 (cost increase)	Yes	This should be done.
11	Reevaluate improvements at the southern termini of the project – Milledgeville Road/S.R. 4	\$115,989	No	Due to superelevation, the existing curb and gutter and sidewalks cannot be maintained and will need to be replaced.
12	Use common residential drives along S.R. 4/15 th Street in the proposed Historic District	\$1,207	No	The driveway locations have been placed so that they line up with existing driveways and existing garages.
13	Use an auxiliary parking lane along the proposed 15 th Street Historic District between Essie McIntyre Boulevard and the Castleberry Food's entrance	\$74,829	No	Due to the deteriorating condition of the existing pavement a new pavement section will be required.
14	Reduce the 20-foot median to 18-foot throughout the project	\$127,375	No	Since VE Alternate No. 15 will be implemented, this VE Alternate is no longer applicable.
15	Reduce the 20-foot median to 16-foot throughout the project	\$480,146	Yes	This should be done.
17	Use retaining walls to keep from impacting the YMCA complex	-\$39,899 (cost increase)	Yes	This should be done.

ALT #	Description	Potential Savings/LCC	Implement	Comments
19	Realign drainage piping at Koger Street and Koger Road	\$12,883	Yes	This should be done.
21	Eliminate the two "U" turn "Eyebrows" at Tubman Home Road	\$60,954 Proposed Cost Savings \$30,477 Revised Costs Savings	Yes	The "U" turn "Eyebrow" in the southeast quadrant will be removed. The other one will stay.
23	Do not signalize the Castleberry Food entrance	\$174,560	No	This intersection is currently signalized.
24	Use a single longitudinal drainage system versus a parallel system	Design Suggestion	Yes	This should be done.

A meeting was held on June 8, 2007 and Jill Franks of Urban Design, and Brian Summers, Ron Wishon and Lisa Myers of Engineering Services were in attendance.

The results above reflect the consensus of those in attendance and those who provided input.

Approved: signed by David E. Studstill, Jr. Date: June 11, 2007
David E. Studstill, Jr., P. E., Chief Engineer

BKS/REW

Attachments

c: Gus Shanine, FHWA
Todd Long
Neal O'Brien, Jill Franks
Rusty Merritt
Richard Marshall
Melanie Nable
Nabil Raad
Lisa Myers